

THE MANAGER**CROPPING STRATEGIES**

By Bill Cox & Phil Atkins

Research explores how hybrid relative maturity affects corn silage yields and moisture levels in western New York

Plant a range of hybrid maturities

Corn silage hybrids, grown in central and western New York, typically range in relative maturity (RM) from about 95 to 115 days. Topographical differences and proximity to the Finger Lakes and Great Lakes greatly influence growing degree days and first fall frost. Those factors subsequently influence the hybrid RM dairy producers select.

Also some producers may plant hybrids of shorter RM to ensure timely planting of a rye cover crop, especially on highly erodible land (HEL).

To get a better idea of how RM affects silage yield and moisture, we have harvested the Cornell corn silage hybrid trial at Sparta Farms in Livingston County, N. Y., on the same day since 2004. This data set with 10 to 20 hybrids in each RM should give a good indication of the relationship between RM and silage yield and moisture.

As the RM of each hybrid increases by five days, silage yields, adjusted to 65% moisture, increase by about 0.65 tons per acre (**Table 1**). Consequently, a 105-day hybrid would be expected to yield about 1.3 tons per acre more than a 95-day hybrid.

Year-to-year variability among RM groups occurs, however, with less or no yield increase for hybrids of longer RM in years when dry conditions occur in late July and August, such as 2005 and 2007.

As the RM of each hybrid increases by five days,

silage moisture at harvest increases by about 1.5 percentage units (**Table 1**). Consequently, a 105-day hybrid would be about 3 percentage units wetter than a 95-day hybrid in mid-September.

In warm years, such as 2010, when corn silage harvest occurs in early September, silage moisture decreases about 0.5% per day. That means a 105-day hybrid would be ready about six days later than a 95-day hybrid.

In cool years, such as 2009, when corn silage harvest is in late September, silage moisture decreases about 0.33% per day. A 105-day hybrid would be ready about nine days later than a 95-day hybrid.

Planting plan

Despite the higher yield potential of longer-season hybrids, don't plant all your fields to these hybrids:

- In years with an earlier than normal frost, longer-season hybrids would probably be frosted before attaining 70% moisture, reducing yield potential.

- In cool years long-season hybrids won't attain 70% moisture until late September or early October. Growers run the risk of wetter soils and slower drying conditions.

On the other hand, you don't want to sacrifice corn silage yields by planting all short-season hybrids, especially in years of high corn grain prices.

Bottom line: Plant a range of hybrid maturity groups across your dairy with the shorter season hybrids on these fields: frost-prone, HEL ones that require a cover crop after harvest or wet ones that require a later planting date. On other fields, plant longer season hybrids that will mature reliably to maximize yield potential. □

Table 1. Average corn silage yields of four hybrid maturity groups

Maturity Group	2004	2005	2006	2007	2008	2009	2010	Avg.
Yield								
95-100	23.9	20.9	27.6	22.6	25.0	27.9	25.1	26.5
101-105	24.1	20.7	28.4	22.7	26.5	28.6	27.3	27.3
106-110	26.2	22.3	29.4	22.5	27.2	30.4	27.9	28.0
111-115	26.4	23.3	29.1	23.6	26.9	30.3	28.1	28.5
Moisture								
95-100	65.7	69.1	65.8	66.4	66.0	66.3	63.3	66.2
101-105	66.9	70.7	67.4	68.1	67.4	68.4	64.0	67.7
106-110	68.2	72.2	69.2	68.9	69.0	70.1	66.3	69.2
111-115	69.5	73.3	70.2	70.2	70.0	71.5	67.5	70.8

Planted as part of Cornell corn silage hybrid trials at Sparta Farms, Livingston County, N.Y., from 2004-2010.

FYI

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